

# Notice of Allowability

Application No.

10/619,648

Examiner

Mujtaba K. Chaudry

Applicant(s)

HETZLER ET AL.

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 2/25/2007.
2. ☒ The allowed claim(s) is/are 1-6 and 8-12.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 2/26/2007.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_



GUY LAMARRE  
PRIMARY EXAMINER

**DETAILED ACTION**

Applicants' response filed February 25, 2007 has been received.

- Amendments filed after final are considered and entered.
- Claims 1-6 and 8-12 are allowed.
- Minor amendment to claim 9 is made.

Application allowed.

**EXAMINER'S AMENDMENT**

An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this Examiner's amendment was given in a telephone interview with Joseph Curtin on February 26, 2007.

Please amend the application as follows:

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**Please replace claim 9 with:**

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9. The data storage subsystem according to claim 1, wherein the read operations read data from the data storage units that are not being updated, and the four write operations write data to the data storage unit being updated and to the three check storage units.

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### REASONS FOR ALLOWANCE

Claims 1-6 and 8-12 are allowed. The following is an Examiner's statement of reasons for allowance:

Independent claim 1 of the present application teaches a data storage subsystem, comprising: three data storage units; three check storage units; and an array controller coupled to the three data storage units and the three check storage units, the array controller determining the contents of the check storage units so that any three erasures of the data storage units and the check storage units can be corrected by the array controller, the array controller updating a block of data contained in any one of the data storage units and the check storage units using only six IO operations while determining the contents of the check storage units so that any three erasures of the data storage units and the check storage units can be corrected by the array controller. The foregoing limitations are not found in the prior arts of record. Particularly, none of the prior arts of record teach nor fairly suggest, "*...the array controller updating a block of data contained in any one of the data storage units and the check storage units using only six IO operations while determining the contents of the check storage units so that any three erasures of the data storage units and the check storage units can be corrected by the array controller.*"

Dependent claims 2-6 and 8-12 depend from allowable independent claim 1 and inherently include limitations therein and therefore are allowed as well.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mujtaba K. Chaudry whose telephone number is 571-272-3817.

The examiner can normally be reached on Mon-Thur 9-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 571-272-3819.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mujtaba Chaudry  
Art Unit 2133  
February 26, 2007